

INDIAN NOTES AND MONOGRAPHS

Vol. II



No. 6

A SERIES OF PUBLICA-
TIONS RELATING TO THE
AMERICAN ABORIGINES

ARCHEOLOGICAL INVESTI-
GATIONS ON MANHATTAN
ISLAND, NEW YORK CITY

BY
ALANSON SKINNER

NEW YORK
MUSEUM OF THE AMERICAN INDIAN
HEYE FOUNDATION

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THIS series of INDIAN NOTES AND MONOGRAPHS is devoted primarily to the publication of the results of studies by members of the staff of the Museum of the American Indian, Heye Foundation, and is uniform with HISPANIC NOTES AND MONOGRAPHS, published by the Hispanic Society of America, with which organization this Museum is in cordial coöperation.

ARCHEOLOGICAL
INVESTIGATIONS ON
MANHATTAN ISLAND,
NEW YORK CITY

BY
ALANSON SKINNER



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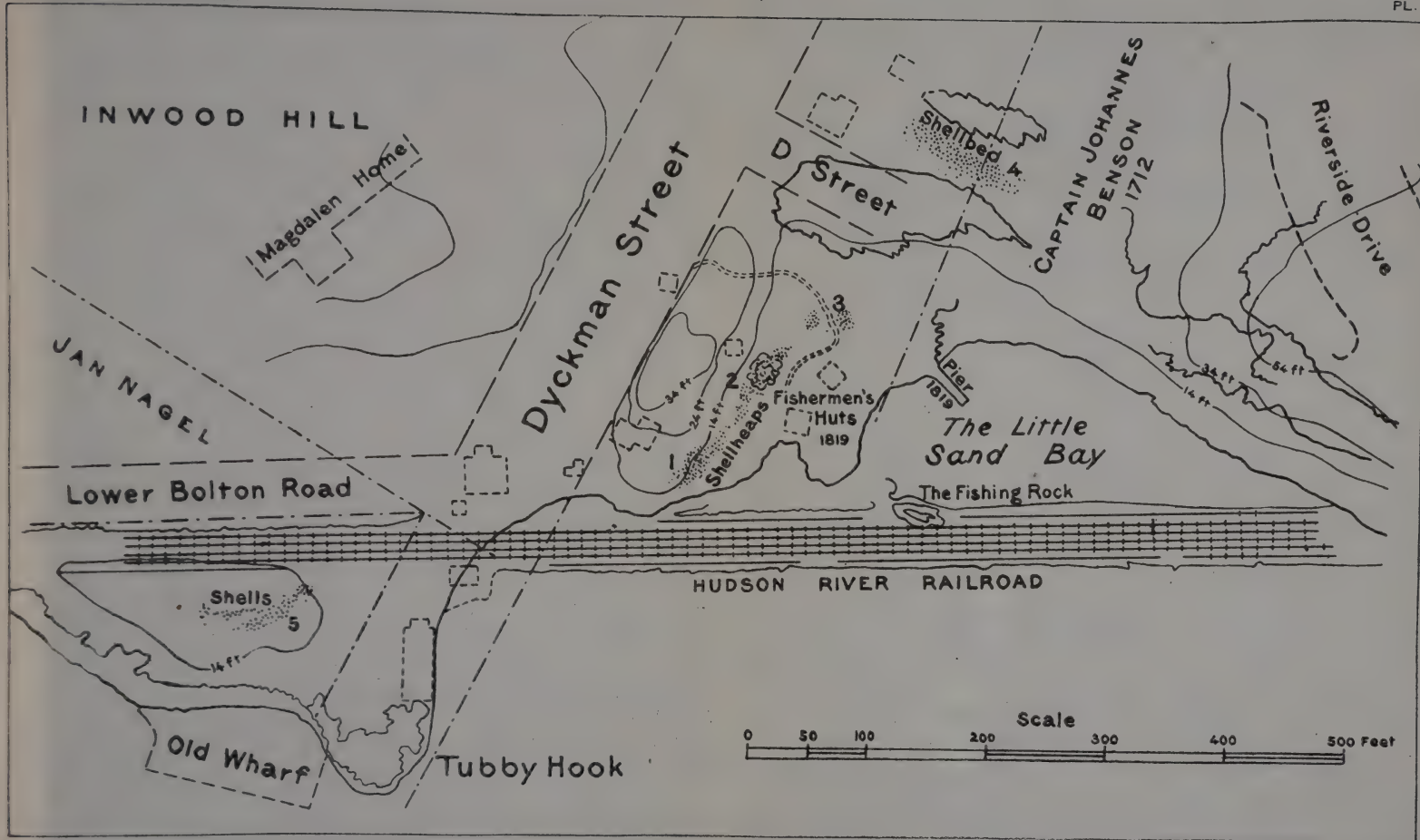
INTRODUCTION



HERE is no given spot in North America less likely to appeal to the layman as being rich in aboriginal remains than Manhattan Island, the thickly populated metropolis of the Western Hemisphere. Yet for many years archeologists have known of the existence of Indian village and burial sites in the city lots bordering upper Broadway, Spuyten Duyvil creek, and Hudson river, and history and tradition alike speak of numerous native settlements on the southern end of the island, which have long since been obliterated.

Since scientific interest in North American archeology commenced, the only field remaining open to students of Manhattan Island archeology was that embraced in the unsettled districts of Harlem and Washington Heights, and for thirty years Messrs Bolton, Calver,

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	<p>Chenoweth, James, Marshall H. Saville, and Skinner have made and published the results of their discoveries in these parts. Yet it has remained until the last year for Mr Skinner, in behalf of the Museum of the American Indian, Heye Foundation, to discover or to explore several little-known localities within the restricted area left for investigation, and it is the purpose of this paper to describe the data and specimens thus gathered and placed with the Museum's archives and collections.</p> <p>Mr Skinner has found only one site remaining on Manhattan Island which may be ascribed to the ancient local culture. This site and its yield of artifacts are described as a separate unit; the others receive a brief description, in order as they occur from south to north, with additional data on a site of the same culture that once existed on the mainland at Van Cortlandt Park.</p> <p style="text-align: right;">GEORGE G. HEYE, <i>Director.</i></p>
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THE SHELLHEAP AT TUBBY HOOK, FOOT OF DYCKMAN STREET, NEW YORK CITY
(From a survey by Reginald Pelham Bolton)



ARCHEOLOGICAL INVESTIGA-
TIONS ON MANHATTAN
ISLAND, NEW YORK CITY

By ALANSON SKINNER

ARCHAIC SITE AT THE FOOT OF DYCKMAN
STREET



NEAR Tubby Hook, about 200 feet south of the foot of Dyckman street, east of the railroad tracks, on Hudson river, and in the mouth of what was once a rocky wooded ravine (pl. 1), is a series of small shellheaps where explorations were made by the writer and his assistant, Mr Amos One-road, in March 1919. These heaps extend inland, approximately east and west, and are separated from each other by a number of ridgelike rock outcroppings.

Shellheap No. 1, nearest the river, covers an area of about a quarter of an acre, and is now overrun by a rank growth of poison ivy and shrubs. A swamp, once containing a spring, that lies immediately to the south, is now in process of being filled in by the Hudson River Railroad, so that both the swamp and the shellheap will soon be covered and lost.

Near the railroad tracks, and partially covered by the decaying remains of a huge fallen chestnut tree, is a small, approximately circular mound of shells, about fifteen feet in diameter, and standing two and a half feet above the surrounding surface. The shells of this mound extend another two and one half feet below the surface of the soil. The deposit has no appearance of being of ceremonial origin, but seems to be merely a heaped-up accumulation of kitchen débris.

Excavation in this mound, or heap, revealed at the very bottom discolored



CHIPPED STONE OBJECTS FROM THE ARCHAIC SHELLHEAP
AT THE FOOT OF DYCKMAN STREET
(About five-millims actual size)

earth and sparse shells, twenty-eight inches deep; next dark earth, nearly black for four inches; then twenty-eight inches of oyster-shells, interspersed with occasional bits of animal bone or antler of deer and elk; next, until within six inches of the surface, much wood ash charcoal, discolored earth, bones of animals, and a few potsherds.

At the base of the mound were discovered crude implements of stone, in appearance like rejects (pl. II), or unfinished arrowheads or blades, chips of quartz, flint, and argillite, often coated with a thick deposit of lime, and pitted and a plain hammerstone. With these were associated bones of deer, fish, fowl, and tortoise, and a canine tooth of an elk.

In the central dense layer of oyster shells no artifacts were unearthed, but a few animal bones, including the top of the skull of a Virginia deer, with both antlers attached, were discovered. The prongs had been broken from the ant-

lers, probably by the Indians, who may have desired them for the purpose of fashioning arrowpoints.

In the topmost layer of the mound were found crude stone arrowpoints, both notched and triangular, deeply encrusted with lime. Archaic Algonkian potsherds of soft, ill-baked, crumbly ware were found, and the end of a heavy celt-like gorget perforated in one of the upper angles (pl. III, *a*). A single sub-Iroquois sherd lay among the grass-roots, almost on the surface, and may have been dropped there long after the builders of the mound had passed away.

The upper part of the shellmound, by comparison with other local remains, seems contemporary with the bottom layers of the great shellheap at Throgs Neck, described in another paper,¹ while the lower portions are somewhat older, since they are without pottery or the variety of stone articles (such as banner-stones and grooved axes) found in the lowest layer at Throgs Neck.



STONE OBJECTS FROM THE ARCHAIC SHELLHEAP AT DYCKMAN STREET

a, Heavy perforated pendant or oolt; *b*, Rude grooved club-head; *c*, Part of a crude gorget.
(About two-thirds actual size)

After the demolition of the mound it was discerned that the shellheap dipped into the soil on the west for two feet, filling a natural depression. Here were found more than the usual quantity of wood ashes, charcoal, burnt stones, and split deer-bones. With these were a few rude bone tools and a fragment of a celt. Almost at the surface were found three rather doubtful sub-Iroquois potsherds, a slightly grooved club-like stone, and some lozenge-shaped arrowpoints of argillite, very much disintegrated.

OBJECTS FROM THE DYCKMAN STREET
SHELLHEAP

Pottery.—Except for four small sherds of sub-Iroquois ware, the potsherds from this heap were all of very heavy, coarsely tempered, crumbling Algonkian ware. While, judging from remains found on neighboring sites, the prevailing form of jar was presumably of the typical pointed-bottom Algonkian style, no large fragments were re-

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	<p>covered, nor could contact be established on the weathered sherds to build up enough of any vessel to determine the shape definitely. Most of the sherds show that the clay was tempered with burnt and pounded local micaceous schist, but in some cases shells were baked and crushed for this purpose.</p> <p>Many of the pottery fragments show the impression of the fabric-marked paddle, and a few give evidence of a feeble attempt at decoration with the fingernail or a bone or wood sliver. No genuine pattern or connected decorative motive is apparent on any of the small sherds recovered.</p> <p><i>Chipped Stone Objects.</i>—Pl. II shows some characteristic projectile points from this old midden: <i>a-c</i> are archaic points, or possibly rejects, from the lowest layers; the other points, <i>d-i</i>, are from the center of the mound of shells, and <i>j-l</i> show better-formed specimens from near the surface. It will be noted that the ancient lozenge type (<i>c</i>), while pres-</p>
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BONE AND ANTLER OBJECTS FROM THE ARCHAIC
SHELLHEAP AT DYCKMAN STREET

- a*, Worked end of an antler tine; *b*, *c*, Notched bases of bone awls; *d*, Perforated base of a bone implement; *e*, Bone pottery graver or chisel; *f*, *h*, Rude awls; *g*, Worked phalangeal bone of deer. (*h* is $2\frac{9}{16}$ in. long)

ent in the lowest layer, is not so prevalent as is usual in old deposits of this character.

Pecked and Polished Stone Objects.—Pl. III, *a*, shows the fragment of the heavy rectangular celt- or gorget-like object perforated in one of the upper angles, above referred to. Its use is problematical, but the specimen seems to be of the same class as two examples illustrated by Moorhead, found on the banks of the Susquehanna near Oneonta, N. Y.² No other specimens of this type have been reported from tidewater New York.

Fig. *b* of pl. III represents a crudely-grooved stone club- or hammer-head, and fig. *c* half of a rude slate gorget broken across the perforation. A new hole was commenced on one side, but the task was abandoned before the drilling was completed.

Bone and Antler Objects.—Pl. IV illustrates some typical bone implements from the mound: *b* and *c* are pieces of

bone awls with notched bases, while *d* shows the perforated butt of a bone implement; *f* and *h* are primitive awls made of sharpened slivers of deer-bone, and *e* is a dull-pointed bone splinter, perhaps a pottery graver or crude chisel; *a* represents the end of an antler tine, cut off with a stone knife and roughly dressed into plummet-like shape, while *g* is one of the phalangeal bones of a deer cut off at the base and hollowed, and indented at one side, possibly to make a small gouge for cleaning out charcoal when carving wood by the burning and scraping process.

It will be noted that these bone and antler artifacts are unusually crude and primitive, even in a region where art in bonework never attained any great height. The same may be said of the stone and pottery objects from this site.

SITE AT FORT WASHINGTON PARK

At Fort Washington Park, on the southern side of the point in particular,

there are traces of Indian shellheaps, fireplaces, and pits, indicating an ancient camping-ground, but nothing more than a few chips, points, and sherds has ever been found.

Other traces may be discovered in all fields or lots where any of the original surface soil still remains, as far south as 158th street. In former years, doubtless, the same was true of all the fields in Harlem, especially near the water.

REMAINS AT THE CORNER OF BROADWAY
AND ISHAM STREET

On March 7, 1919, two Indian kitchen-refuse deposits, situated in a vacant lot at the northeast corner of Broadway and Isham street, were opened and examined.

The first shellbed proved to be a small, thin, kitchenmidden, ten or twelve feet square and two or three inches thick. Tests located nothing more than charcoal and small oyster-shells. The second deposit was a pit in the angle of Broad-

way and Isham street, on the slope of a knoll. It was barrel-shaped, with a diameter of two and a half feet, by four feet deep. The contents were oyster-, hard-clam-, soft-clam-, and mussel-shells, a few deer- and fish-bones, and fragments of tortoise-shell. At a depth of six inches a bit of the stem of a white clay trade pipe was discovered, and at a depth of eight inches the skeleton of a puppy was found standing erect, heading west. Six inches deeper the entire pit was paved with the dorsal plates of a large sturgeon, carefully arranged with the rough surface down. This, however, was far from being the bottom of the pit. Four feet from the surface the charcoal and oyster-shells, sparser below the sturgeon-scales, ended at a stone hearth, among the bowlders of which lay a partially grooved stone clubhead or weight. A worked conch columella or wampum blank was also found.

Across the street in the northwest angle of Isham street and Broadway a

small shellheap was located. This was about fifteen feet across and twenty-five feet long, by a foot deep. Deer-bones, fish-bones, charcoal and burnt stones, flint chips and potsherds, were common. Rim fragments of five different jars of Algonkian and sub-Iroquois types were found.

A small pit two and a half feet across by two and a half feet deep was uncovered at the northeastern edge of the shellheap, but it held only oyster-shells. Arrowheads, chips, a good grooved stone club, and potsherds were found on the surface nearby. None of these remains showed any variation in culture from those investigated at Inwood and in the immediate vicinity.

REMAINS ON VAN CORTLANDT PARK
(KESKESKICK) PARADE-GROUND

In the *New York Tribune* for December 14, 1890, under the heading "Old Indian Relics," is an interesting notice of aboriginal remains found on the site

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	<p>discovered when the present Van Cortlandt Park parade-ground was graded, even the topography of which has now been changed. As this spot was undoubtedly one of the mainland campgrounds of the Manhattan, the account may well be given here. [See the Bibliography, <i>s. v.</i> James.]</p> <p>“This plot of ground lies just to the north of the old Van Cortlandt mansion, extending to Broadway on the west, and the lake on the east, and running northwest some 2000 feet, between the line of the Yonkers Rapid Transit Railroad and Broadway, and comprising a large level plain, forty to fifty acres in extent. The northern half of this tract is low meadow, somewhat swampy, and traversed from north to south, and through its center, by a brook which, about midway of the whole plain, bends off at a right angle with its general course, and running eastward empties into Van Cortlandt Lake. Along the brook are beds of gray and dark blue clay, mingled with sand. The southern half lies higher than the northern, is level, and consists of a sand and gravel drift, with a loam top-soil. Here explorations have recently been carried on, and interesting relics have been found.</p> <p>“All of this tract was formerly known as ‘Van der Donck’s planting field,’ for it con-</p>
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stituted part of the large possessions of the renowned Dutch Heer Adrian Van der Donck, and was cultivated by him in the year 1649, when he began to build his house a short distance below, on the island of Papurinimen, now Kingsbridge. But long before his advent, undoubtedly, it had been used as a corn field by the original lords of the soil. This plain, and the country for miles about it, was called by the Indians, Weeckquaeskeek, or 'the birchbark country', and its inhabitants were known to the settlers as the 'Wicker's Creek Indians.' In the Indian deeds of sale for this district the name is spelled Kekeskick or Keskeskick, and the chief ruling over it at the time of its conveyance to Van der Donck, in 1646, was the sachem Tacherew.

"The work of grading the parade ground was begun in May of the present year at the northernmost part of the lower half of the tract. The required level having been reached there, the excavation was carried back toward the mansion, due south, and extended from Broadway to the site of an old stone farmhouse, where a large willow tree is now standing. The process of grading consisted in ploughing up a small section, removing the earth so loosened in scrapers to the low ground that it was necessary to fill in, and repeating the operation as often as required to obtain the grade. In this way the soil was gradually sliced off to a depth ranging from two feet to about five

feet. No better method could have been devised to bring to light any relics which might have found a hiding place there; and scarcely was the work fairly under way when many such were discovered in the numerous shellheaps (pits) uncovered from day to day. By mere chance the attention of John Bradley James, Jr., an ardent student of archeology, living in Riverdale near the park, was called to these discoveries . . .

"When the workmen had removed a foot or so of earth, the tops of the shellheaps began to show on the new surface. Sinking the spade a few times sufficed to disclose the diameter of the heap, and then a small trench would be dug along one edge of the rim and as deep down as the shells extended. This would give a sectional exposure, forming what is called a 'face'. The mass of shells would be worked through carefully with the trowel, the 'face' being carried back until the heap was thoroughly examined Many that were so examined contained nothing whatever of value.

"The shellheaps were undoubtedly ancient fireplaces or hearths. They were found at depths of from one to two feet below the surface. They were composed principally of oyster shells, in which were mingled the shells of the hard and soft clam, mussel and occasionally of the scallop, together with the bones and teeth of animals, and fragments of potsherds, interspersed with charcoal and ashes. The hearths are bowl shaped excava-

tions of varying dimensions, the average size being three feet in diameter at the top and eighteen inches deep, though in numerous instances they were much larger. They had evidently been made by scooping out the earth with large shells. Below the bottom of one, and protected from the fire by an intervening layer of sand that had fallen in soon after the hole had been dug, three enormous oyster-shells were found that had probably been used for this purpose.

"The hearths were made to serve a double purpose. They were the fireplace and oven of the family, and after they were no longer of use for this purpose they became the graves for the burial of the dead. Four of the excavations examined by Mr. James contained skeletons which were surrounded with shells, charcoal, and other refuse. Of the thirteen skeletons found, four had been buried as mentioned, the others having no shells about them. There must have been a cause for the two methods of burial, and Mr. James's story is that when a death occurred in the winter the Indians, having no tools to cut through the hard and deeply frozen ground, buried the body in one of the fireplaces; when a death occurred in warm weather they buried the corpse in a grave dug in the soil. These rude ovens, while in use, would gradually accumulate all the refuse from the huts.

"It is also a remarkable fact that the beaks of the oysters were unbroken, showing

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	<p>that they had not been opened by mechanical means. They may have been opened by immersion in a jar of hot water or by exposure to the heat of a fire, but not by actual contact with the fire itself.</p> <p>"The shell-heaps, or hearths, were found scattered over a space 650 feet wide by 950 feet in length, or an area equal to about fourteen acres, and were most numerous in the north and north-central part, where for a considerable extent the soil was black with ashes and minute particles of charcoal, and thickly dotted with hearths. . . . Throughout the whole fourteen acres they appeared at intervals and often close together in groups.</p> <p>"The pottery discovered is made of coarse clay mixed with sand, and is unglazed. In color it is a dark reddish brown, and is usually ornamented only on the neck and rim of the vessels with a series of lines and dots or geometrical figures. These have no set pattern, but show great individuality of taste, as among some forty odd specimens found by Mr. James, no two are alike. No whole vessels have been found, but some of the fragments are of large size. The ornamentation is either impressed or scratched, the latter form being comparatively rare. In shape and decoration many of the vessels possess considerable artistic merit, which is exemplified particularly in a fragment of a small vessel of thin clay, showing the neck and rim. This has a square mouth, the brim</p>
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rising at the corners and terminating there in a nodule. The ornamentation is scratched upon the clay in a series of lines and triangles. . . .

"Sufficient fragments of two large pots were found to complete, when glued together, about two-thirds of the neck and rim and to outline the other parts of the vessel. They measure, across the brim, $8\frac{3}{4}$ and $10\frac{1}{2}$ inches respectively. In the larger the decoration is on the rim only, while in the smaller it extends down on to the neck and body of the vessel. A number of low points rise from the top of the brims of both of these pots, giving them somewhat the appearance of crowns.

"Many stone and bone implements have also been discovered. Among the bone implements were articles somewhat resembling women's large bone knitting needles, but shorter and flattened, with one end only sharpened, and an awl formed from one piece, the point being curved. The stone articles are ruder than might be expected of a people who produced such good pottery, and consist of arrowheads of white quartz and hornstone, a mortar and pestle for grinding corn, composed of a cobblestone slightly hollowed one side of the mortar, and a rounded stone about the size of a man's fist as the pestle; a rough stone hatchet, three or four pounding stones showing battered surfaces, and a long, flat, tongue-shaped stone chipped from a micaceous

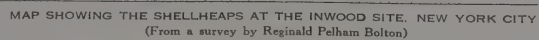
gneiss about fifteen inches in length, the name or use of which is not known. [A stone gouge and a Venetian polychrome bead were also found.]

"Fragments of the bones and teeth of various animals were also obtained from the hearths, and among them were bones and antlers of the deer, jaws of the dog, bony plates from the back of the sturgeon, etc. Several charred hickory nuts showed that they also entered into the Indian diet. The larger bones had all been split lengthwise to get out the marrow.

"Skeletons, or parts of skeletons of thirteen Indians were found. Four of these were found in the hearths, one in each, and from the position of the bones, had been doubled up to make them fit into their graves. . . . The remaining nine were not buried in the hearths, and had no shells about them. Bones forming these skeletons were ploughed up at various times, and form only parts of the framework of several bodies."

INWOOD VILLAGE-SITE AND ITS HISTORY

Not more than two miles north of the Museum of the American Indian, Heye Foundation, and about ten minutes' walk from the subway station at 207th street and Broadway, is situated what is probably the most famous Indian village-site





in tidewater New York. For at least thirty years collectors have searched the fields and made desultory excavations in the shellheaps and rockshelters here, and many hundreds of specimens therefrom have been added to the collections of this Museum and others, and of private individuals (pl. v).

The Inwood site is near the extreme northern part of Manhattan Island, on the southern bank of Spuyten Duyvil creek, a quarter of a mile or less east of its junction with North river, at the mouth of a deep valley which extends southward from the shore. On the west a precipitous rocky cliff rises nearly two hundred feet; on the east there are several wooded knolls that roll gradually into another high ridge paralleling Seaman avenue, where, near the bend of Prescott street, is a small, flat-topped knoll overlooking the flatter country to the east. On this knoll are traces of the only hilltop fort of the local Indians that still remains. The traces are con-

fined to a few shellpits and fireplaces. A fairly heavy forest growth still exists in the valley, but the brook which once coursed northward to Spuyten Duyvil creek is now dry, except at its upper stretches, where a rill still trickles. The mouth of the valley, which might be supposed to be open to the sweep of the north wind down the Hudson, is sheltered by Spuyten Duyvil hill, across the creek (pl. vi), which, extending east and west, acts as a windbreak. At the mouth of the valley, too, there are several cold perennial springs; and at the foot of the great cliff, a few hundred feet away, are three rockshelters which have long attracted the attention of archeologists.

In the fall of 1918 the writer undertook to explore the remnant of the Inwood site for the Museum of the American Indian, Heye Foundation, and, with his assistant, Mr Amos Oneroad, commenced to test the wooded knolls east of the cliff and its rockshelters. Investigation soon developed the fact that these



THE INWOOD SITE LOOKING NORTH ACROSS
SPUYTEN DUYVIL CREEK

sandy rises had been badly cut up by former collectors, so attention was transferred to the bed of the old brook, near its mouth.

It was evident that, had the brook flowed abundantly in Indian times, it would have been a convenient dumping-place for dwellers in the shelters and on the knolls, who could have relied on the running water to remove much of the refuse that accumulated about their lodges.

A number of test-holes were sunk, and these soon brought to light a shellheap (see the map) under about three feet of wash. This shellheap was two and a half to three and a half feet deep, and was composed principally of oyster-shells, but here and there hard and soft clams, scallops, conches, and a variety of land and marine shells were represented.

It was soon learned that the deposit not only chokes the old brook bed, so that the stream was diverted from its course several times in bygone years, but forms a delta at its mouth, the shells and

wash extending down to the very banks of the Spuyten Duyvil. On the east also the shells extend almost, if not quite, all the way to the great tulip tree (pl. vi), near the roots of which a trial trench exposed a layer of shells, nearly barren of artifacts, three feet from the surface and four feet thick. These shells, which are not a wash deposit, and those that are seen outcropping on the surface of the knoll farther over, seem to belong to a period perhaps earlier than the real brook-bed deposit, judging by the sparse and archaic relics which they contain. That they are really connected with the brook-bed heap is uncertain, for digging in the area where they may come in contact was prohibited, as it lay under a roadway. As indicated on the map, the brook deposit is two hundred feet long, and varies from twenty-five feet broad on the south to one hundred feet at the mouth of the stream where the delta borders Spuyten Duyvil creek (pl. vii).



THE INWOOD SITE FROM THE NORTH

The rock-shelters are near the foot of the bluff, behind the house at the left

Investigations in the brook-bed heap soon showed that at the very bottom an ash and charcoal layer occurred, and here were found bone awls and bodkins, hammerstones, Algonkian pottery, and in the midst of the fragments of a huge red-clay bowl, a short, stubby, grooved axe, the blade of which had been re-chipped and even partially ground before it was lost. - At one spot scores of chips of greenish jasper, a bone sliver used as a flaking tool, a broken shoulder from a stemmed point, and a fine, elongate, triangular blade of mottled gray-brown flint, showed where some careless arrow-maker had cast a lot of his waste.

From the center of the heap, here no more than a foot thick, came a keen but crude gouge or adze (pl. xvi, *c*), a drill of flint of bizarre form (pl. xiv, *h*), awls of bone (pl. xx), cut antler, a fine antler wedge (pl. xxi, *a*), and variously shaped arrowpoints of flint, decayed argillite, white quartz, shale, and yellow jasper,

and coarse Algonkian pottery. On the very surface of the shells, among the grass-roots, lay sherds of several well-made sub-Iroquois vessels. These fragments did not crumble like most of the Algonkian sherds, for they were better fired.

It is interesting to note that in this heap triangular arrowpoints occurred throughout, at all depths. They were found only near the surface in the extensive work done during the same summer by the writer at Schley avenue, Throgs Neck, in the Borough of the Bronx.³

It is believed that the triangular form of arrowpoint was always known to the Delaware Indians, of whom the Manhattan were a part, although there is good reason to think that with them its use was first limited to war.⁴ Among the Indians to the eastward, in the Bronx, and in Westchester county, tribes that were nearer the New England Mohegan and the Pequot in their affiliations, this

variety of arrowpoint seems to have been a novelty introduced with other forms of material culture of the Iroquois.⁵ However, in the Inwood shellheap the remains were so disturbed by the waters of the brook into which they had been thrown, that position was less significant than usual.

The first discovery of interest was a tubular steatite pipe (pl. xix, *b*) which was encountered at the point indicated on the map (pl. v). It was lying with its bowl down, with the stem pointed westward at an angle of forty-five degrees, and no more than six inches beneath the sod; this brought it into the upper level of the shellheap, which here was close to the surface.

Five feet due east of this pipe, the bowl and part of the stem of a terracotta pipe of another type (pl. xix, *a*) was found at a depth of a foot, firmly wedged among the shells.

Two feet west of the last specimen, a portion of the stem of a tubular pipe,

crudely made of coarse clay, was obtained; and nearby the mouthpiece of a fourth specimen, also of pottery. All about these pipe fragments was a deposit, apparently superimposed on the former brook wash, composed of quantities of charcoal, calcined shells of the mussel, scallop, hard-clam, and oyster, fire-cracked stones, scores of bird-bones, bits of a turtle-shell cup, and a number of sherds from an Algonkian vessel, with which were a few rim fragments from a plain sub-Iroquois jar. The appearance of the spot was that of the débris of a feast, cast on the brook rubbish, here washed high and dry, banked up perhaps by spring floods. The presence of so many pipe fragments was so unusual as to cause wonder whether the ancient Manhattan might not here have had some ceremony, possibly a feast of the dead, custom requiring the subsequent discarding or breaking of the pipes smoked by those who participated, that they might never be used again.

At the foot of the steep bluff, where there was an accumulation of talus from the hillside, an eddy had existed when the water was high, and here in a natural basin was deposited a great mass of sediment, mainly ash, perhaps 12 feet in diameter by 3 feet deep. In this ash layer were many well preserved implements of bone, some still showing their original polish. Among these were a spatulate pendant (fig. 8), a pendant with numerous tally notches (fig. 7), and many awls. A few stone relics were secured, among them a four-holed slate gorget (pl. xiv, *a*), a broken celt, and, on what had been the original bank, a large stone mortar with a single cupped depression. Not far away a well-worn muller or grinder (pl. xviii, *a*) lay imbedded in the talus of the bluff. In the ashes were also found five Dutch Colonial bullets, known by their relatively small caliber as compared with those of British times, and the neck of a glass sack bottle.

Near the top of the heap, some distance from the ash-bed, a deposit of antler tines, some partly sharpened by whittling, was unearthed, and among them the remains of a bone-handled knife, which had once possessed a steel blade. These lay near the surface where they may have been placed at a time when this portion of the heap was above water-level. West of this deposit, and at the foot of the bluff near highwater mark of the spring floods, was a round-walled fireplace, about three feet in diameter and six inches high, built of slabs of talus. In the thick deposit of charcoal and ashes which filled it, were thirty-five columellæ of the conch prepared for wampum making, a notched-base bone awl, and a leaf-shape blade of green jasper.

Trenches run from the water's edge inland through the delta composed of kitchen refuse unearthed many interesting specimens. Among these was a bone harpoon-point $3\frac{1}{8}$ in. long (fig. 9),

which, with one exception, is a form of artifact hitherto unreported from tide-water New York. The exception is a broken specimen found by Mr Harrington at Shinnecock Hills, Long Island, and now in the American Museum of Natural History. A foot west of this specimen the large red jasper blade shown in pl. xi, *c*, was obtained.

Near the roots of a large tree, and about eighteen inches from the surface, an effigy tablet (fig. 1) was discovered, not more than twenty feet from high water mark. Besides this, a flat rectangular gorget of the usual two-holed type (pl. xvi, *b*), and half of a red stone ring or bead (fig. 2), were obtained.

A little to the east of these specimens another ash-bed was encountered. Its dimensions were indeterminate, but it extended fifteen feet north and south, and probably ten feet east and west, where it was lost among the usual shells. The eastern part led under Seeley's old cabin, a local landmark, still occupied. The

bed was almost pure ashes and charcoal, and was eighteen inches to two feet in depth. Over it was a layer of oyster-shells three to four inches thick, which covered portions of the bed. In the ashes were several fireplaces marked by small heaps of burnt stones. Ash-beds of this nature, while a characteristic feature of Iroquois sites in central and western New York, have not hitherto been recorded in this locality.

Imbedded in the ashes were found a number of chipped stone points and blades, three grooved stone clubs or sinkers, and a bone awl of the notched base type.

The earliest account of the Inwood site of which the writer has any knowledge is an article in the *New York Evening Sun*, during November, 1890, which describes the discovery of the rock-shelters by Alexander Chenoweth. As the narrative is not readily accessible to archeologists, the following extract is given:

"On the wooded knolls east of the rocky bluff Chenoweth discovered well down in the thick, black mold, between old stumps . . . the pieces of a pot, evidently a water jug, eighteen in. high, and five in. in diameter at the top. Around the rim ran a pattern of lines grouped in triangles. The lines are perfectly parallel, and show that they were made with some instrument less primitive than the pointed stick that scratched the herring-bone pattern on the pottery in the hillock three-quarters of a mile away. The ornamented top is about $1\frac{1}{2}$ in. wide. The pot, which Mr Chenoweth is putting together, flares gradually to the underside of the pattern, is then narrowed to two-thirds its diameter at the top, flares again at the bottom, and terminates in a rough little apex that would prevent it from standing upright on anything harder than mud."

"The west side of the knoll on which Mr Chenoweth found the pot pitches down gradually to a roadway near the bottom of the ravine, beyond which rises a gray half-naked bluff about two hundred feet high. The roadway has been cut through shellheaps between four and five feet high' . . . Mr Chenoweth became convinced from the general direction of the line of the shellheaps . . . that in or beyond the ravine near the shellheaps new relics . . . might be uncovered. After rummaging about in the great loose rocks that form the lower part of the bluff, he came upon several pieces of primi-

tive pottery in the dirt before an irregular quadrilateral hole framed by huge gray slabs of stone.

"Mr Chenoweth dug away the dirt until he found an easy entrance to a chamber in which a man in stooping posture might crawl about with some difficulty. The chamber was dry, and the dirt on the floor was soft. Mr Chenoweth began turning it with his trowel. Many pieces of pottery, some as large as a man's hand, a few as large as a man's two hands, lay in little pockets of the sediment. After six hours of digging Mr Chenoweth had all the fragments of six pots of curious forms and unique manufacture. As he pushed ahead the next day he found a dark exit from the first chamber to a second one. The exit was a hole in the rocks, half filled with dirt, and altogether so small that before being cleaned a man would have to crawl through it. With a torch Mr Chenoweth discovered that the second chamber was about eight feet square by five feet high . . . The comparative regularity of the walls of the second chamber, its considerable size, and its difficulty of access have led him to believe that it was the main room of a cavernous retreat.

"In the meantime, he has been cleaning out the first chamber. The removal of the dirt has left it a rough room about $4\frac{1}{2}$ feet high and 6 feet square. On the rocks at the beginning of the passage to the second chamber, and down below the level of the origi-

nal layer of dirt, Mr Chenoweth found evidence of repeated burning by hot fires. On the floor of the chamber at the foot of the burned rock, he came on rude hearthstones, a dozen or more pieces of deer's antlers, some eight or ten in. long, and all burned, several big sturgeon scales yellow with age and scorched, and scores of bones of many other animals that Mr Chenoweth has been unable to identify from the scanty and burned remains. Above the burned rock and bones there is a crevice in the rocks that apparently served as a chimney for the inhabitants of the cave.

"Among the many implements found by Mr Chenoweth near the entrance of the inferior passage, the most curious is probably a knife with a flint blade and a bone handle. . . . The knife was complete when Mr Chenoweth uncovered it. As he raised it the flint blade dropped from the hollow end of the bone [antler] in which it was fitted. . . . Near the knife Mr Chenoweth uncovered . . . a flat oblong piece of polished slate, two by four inches, with three neatly bored holes in it. Near it was half of a similar bit of slate. . . . The gorget found by Mr Chenoweth is worn away in little corrugations from one side of the middle by some soft substance.

"Nearer the outside entrance of the cave lay a flint axe head. It is an indigo blue tinge, beautifully polished, with a fairly thin edge and a well marked groove. . . . The

head is about six inches long and four inches wide. Beside it there was a curious little oblong bit of flint, smooth and polished, sharpened squarely at one end, and rounded at the other.

The pottery in the cave is especially remarkable in view of the difference from the execution and patterns of the pottery found on the hillock near Inwood street and Kingsbridge road, as well as on the knoll on the trail between the cavern and the hillock. All the fragments in the cave have been unusually large, and have lain so that the various vessels they once constituted might be quite easily put together. . . . The most carefully marked pot lay just two feet within the outside entrance, under one foot of dirt. It is of dark red clay, and is eighteen inches in diameter at the mouth and two feet high. It is contracted slightly at the rim and flares a little in the middle. The bottom has the same curious little peak as that on the pot found in the knoll. Near the rim are nine roughly executed rows of indentations, evidently made with a sharp stick. Perpendicularly from the lowest row run roughened belts of clay, about $2\frac{1}{2}$ inches wide, probably by wiping roots or coarse grass up and down the wet vessel. Another jug of the same material has a mouth but five inches in diameter, with a flaring body almost a foot through, and an almost flat bottom.

"A vessel two feet tall and eighteen inches

in diameter has a rim ornamented by a single row of short parallel perpendicular lines. Its diameter varies little from top to bottom. A jug of five inches diameter at the rim and nine in the body has at the mouth a decoration of three parallel rows of short horizontal, regularly curved lines. The lines were cut in the wet clay with a scallop shell. . . . The largest pot is eighteen inches in diameter at the mouth and is two feet tall, has one row of indentations at the very rim, and oblique irregularly parallel lines all over its body. A jug two feet high and fifteen inches in diameter at the mouth is entirely unornamented.

"The pile of huge rocks that cover and wall up the caverns in which Mr Chenoweth is carrying on his explorations reach about fifty feet up the base of the bluff from the mouth of the first cave. . . ."

The illustrations in this article are excellent, save those representing restoration of the jars, which show errors in the bases, the points being added to vessels of Sab-Iroquois form, and omitted from the Algonkian type shown. It was this error that led to a doubt that pointed-bottom vessels existed in New York; but a jar embodying a similar combination was ultimately found at Clason point.

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	<p data-bbox="291 305 915 329">ABORIGINAL ARTIFACTS FROM MANHATTAN</p> <p data-bbox="291 378 915 1295"><i>Chipped Stone Objects.</i>—As is the case everywhere in tidewater New York, objects of chipped stone found on the Island of Manhattan preponderate over all other native artifacts, and have been found in varying quantities on all sites. The forms, while many, show no striking variation from those which occur on the adjacent mainland and the other islands of New York bay, yet there is an unusual variety in material and in quality of workmanship, facts not altogether to be unexpected, for the position of Manhattan Island made it readily accessible to Indian travelers by water from the inland to the north and west, or those skirting the coast from the south and east. It is not astonishing, therefore, that objects of quartz, flint, and jasper from central and western New York, New England, Long Island, New Jersey, and the region far to the south, were added to the native materials.</p>
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LARGE STONE BLADES

a-d, from the Islam estate; e, from Academy Street. e is 5 $\frac{1}{4}$ in. long.

It is rather remarkable, considering the scarcity of large points or blades of the spearhead or knife type in the immediately surrounding region, that an unusual number of these objects should have been found on Manhattan Island. Yet such is the case, as will be seen by reference to pl. viii, which shows five of these implements, *c* being from a shell-pit west of Academy and 204th streets, whence it was taken and presented to the Museum of the American Indian, Heye Foundation, by Mr John Ward Dunsmore, through Messrs Bolton and Calver. The material is a mottled, dark-gray flint of local origin, and in its present condition, with perhaps half an inch missing from the tip, the specimen measures $5\frac{1}{4}$ in. in length by $1\frac{3}{4}$ in. in breadth across the shoulders. The native owner evidently intended to resharpen the point, and had begun his work, judging by a chipped indentation on one side, when it was lost or discarded.

Plate viii, *a-d*, represent four large

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	<p>blades of a smooth grayish flint, which, in form as well as in material, suggest a southern origin. These were found years ago by Mr William Isham in his garden on West 215th street, and were presented by Mrs Taylor. The largest of these blades is 5½ in. long, but lacks the extreme tip; the other three are each approximately an inch shorter.</p> <p>Plate ix represents a group of projectile points of the lozenge or diamond-shape variety, generally considered as archaic. As these points were found under conditions which preclude conjecture as to their antiquity, being either surface finds or are from unstratified sites, they are merely presented as examples of an old form. Pl. ii shows specimens of this type from the bottom of the shellheap at the foot of Dyckman street, near Tubby Hook. As in the succeeding illustrations, the material of which these points are made varies from age-corroded argillite to white quartz.</p> <p>Plate x shows a series of points of the</p>
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LOZENGE-SHAPED ARROWPOINTS
Two-thirds actual size



STEMMED ARROWPOINTS
(Seven-twelfths actual size)

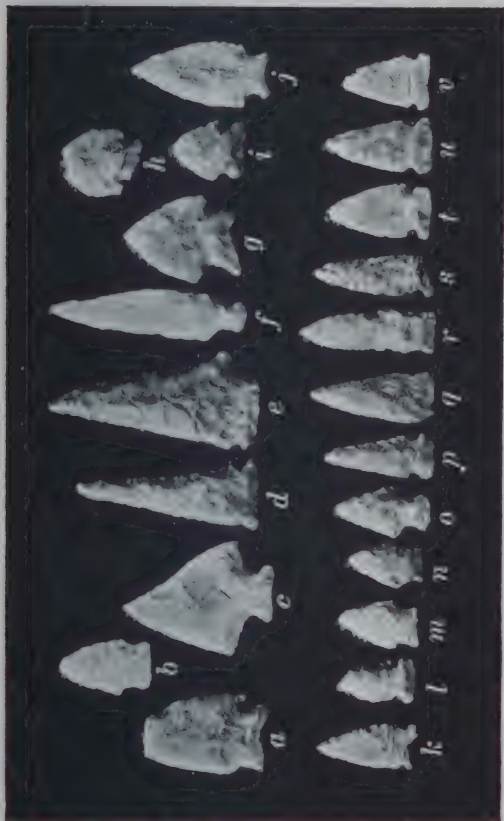
stemmed type, some forms of which blend with the preceding lozenge-shape forms. It is a common variety on all Manhattan Island sites.

Plate xi shows a number of notched-base and stemmed-and-notched points. In this plate fig. *e* represents an unusually large specimen ($3\frac{3}{16}$ in. long) of bright-red jasper, a stone not uncommon locally, which was found in the Inwood shellheap on the brink of Spuyten Duyvil creek. It is peculiar in having one angle of the base notched doubly. The opposing corner is gone.

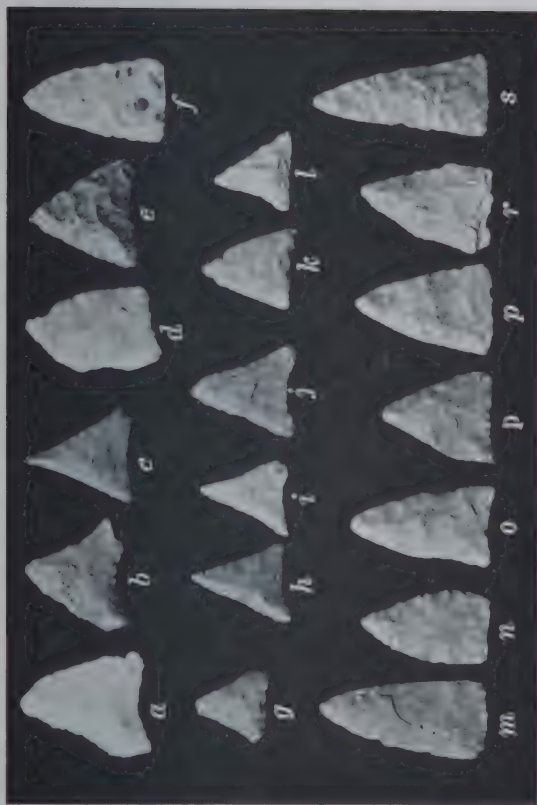
Plate xi, *f*, of gray argillite, from the same locality, shows one of the long, narrow forms misnamed "fish-spears," an archaic type long perpetuated by all the local Indians.

Fig. *d* of the same plate, of black flint, from the same place, is interesting in that it is made of the locally rare "beveled to the right" variety. From the worn appearance of the narrow tip it seems plausible that this specimen may

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	<p>have been used as a drill. Indeed it must be borne in mind that many of the implements classed as "arrowpoints" and "spears" had varied uses. Thus figs. <i>c</i> and <i>g</i>, of local red and green jasper respectively, are in all probability knives, their broad shoulders making them awkward, and their size unwieldy, for attachment to an arrowshaft. Fig. <i>h</i> is of a type rare hereabouts, having a pentagonal blade. Fig. <i>a</i> seems to be a blunt knife, and no doubt was attached to a short wooden handle with a thong or sinew wrapping, since rawhide is little used by the Eastern tribes.</p> <p>Plate XII presents a group of triangular points, mostly arrowheads, although fig. <i>f</i> is in all probability a knife-blade, and fig. <i>d</i> may also have had similar service. It will be noticed that there is considerable variation even in this simple form. There seems no reason to doubt the time-honored theory that, locally at least, these triangular points were used in war. It must be borne in mind, how-</p>
II	INDIAN NOTES



NOTCHED ARROWPOINTS
(About seven-twelfths actual size)



TRIANGULAR POINTS OF CHIPPED STONE

(Seven-twelfths actual size)

ever, that all the Iroquois tribes used tiny triangles almost exclusively, and for all purposes.

Plate xiii gives a series of leaf-shape stone articles classed as knives, of varying sizes and materials. Some of these, as *f* and *j*, may be merely incomplete implements lost or discarded in process of making. Mr Chenoweth claimed to have found a stone knife affixed in its antler handle in the main rockshelter at Inwood, but the authenticity of the specimen is dubious.

Plate xiv, *c*, *d*, and *h*, represent drills. Of these, *h* is a bizarre form with projecting wings at the sides; it is of gray-brown flint, and comes from the brook-bed shellheap at Inwood, which yielded the other two drills shown in the illustration, both of which are of argillite and lack the expanded base usually seen on local Algonkian specimens.

Plate xiv, *e-g*, *i*, *j*, exhibit a series of small scrapers, of which *i* represents the most common variety: it is merely a flake

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	<p>of flint beveled to an edge on one side. Figs. <i>f</i> and <i>j</i> show somewhat more care in their preparation, the butts being worked over to afford a grip for the fingers, while <i>e</i> and <i>g</i> are a rarer type, and exhibit tips broken from arrowpoints and beveled to an edge across the fracture. Sometimes, but still more rarely, the local aborigines utilized the basal portions of broken arrowpoints in the same way, perhaps using a wooden shaft or handle to which they were attached by the notches.</p> <p>Chip scrapers, of the simple form first described, are the nearest rivals to projectile-points and knife-blades in point of numbers on tidewater Algonkian sites. Drill-points are rare, averaging probably not more than one or two to a hundred arrowheads.</p> <p><i>Pecked Stone Objects.</i>—Plate xv represents three grooved axes and a notched axe from Manhattan Island. Fig. <i>a</i> is a good example of an axe with the groove encircling the butt, found at</p>
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STONE KNIVES FROM THE INWOOD SHELLHEAP

(Seven-twelfths actual size)



GORGETS, DRILLS, AND SCRAPERS

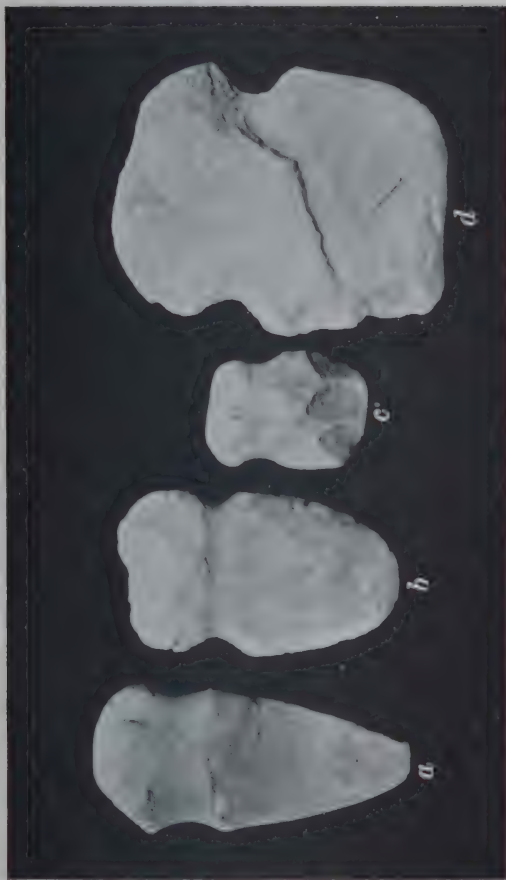
a, b, Gorgets; *c, d, h, h*, Drills; *e-g, i, j*, Scrapers. (About five-ninths actual size)

the foot of Valentine Lane, and presented by the Rev. William R. Blackie, of Woodlawn, New York, a life-member of the Museum and a well-known student of local archeology. As is usual with this class of implements, both the groove and the blade are somewhat polished.

Pl. xv, *b*, represents an axe of the same type as the preceding, found in 1889 at 189th street and Broadway, by the late Anthony Woodward. It has no unusual features, except that a great flake has been broken from one side of the blade without impairing its usefulness to the native owner.

Fig. *c* of the same plate is a small, stubby specimen of quartzite (the usual material is local traprock), found by the writer at the bottom of the brook-bed shellheap at Inwood, among the fragments of a large Algonkian pottery jar. The axe has been much longer, but the blade becoming dulled or broken, its Indian owner rechipped it. Probably the hardness of the stone precluded the

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	<p>usual pecking by which the groove was made, and the well-known conchoidal fracture of the material suggested the chipping. The grinding and polishing with which the cutting edge of these tools was always finished was commenced, as may be seen on the specimen, before it found its way into the bed of the brook.</p> <p>The notched axe shown in fig. <i>d</i> of pl. xv is a rough specimen, and is catalogued as having been found by Mr Woodward at 189th street and Broadway, where the axe shown in fig. <i>b</i> was also obtained. The type is not abundant locally.</p> <p>Axes with a groove encircling three sides, but with one edge left flat for the insertion of a wedge, have been obtained on Manhattan Island, and several examples are in the collection of the American Museum of Natural History.</p> <p>Pl. xvi <i>a</i>, <i>b</i>, represent two rough, unfinished celts from the brook-bed shellheap at Inwood. Examples of fin-</p>
II	INDIAN NOTES



STONE AXES

a-c, Grooved axes; *d*, Notched axe. (About five-eighths actual size)

ished and polished celts, unfortunately all broken, were also obtained there. There are some completed specimens in the Chenoweth collection in the American Museum of Natural History.

Pl. xvi, c, shows imperfectly a stone gouge taken by Mr Oneroad from the brook-bed shellheap at Inwood. The hollowing is slight, and indeed the implement could have been used equally well as an adze. In any event the form is a rare one in tidewater New York, few examples of either type being recorded, and none of them from Manhattan Island.

Pl. xvii exhibits, in *a* and *d*, two different varieties of small grooved clubs or sinkers found more abundantly on Manhattan and Staten islands than on the adjacent mainland. The first of these objects, which is longitudinally grooved, represents the more common variety. In some examples the groove becomes a mere pecked notch at each end. Fig. *d*, coming, like the former, from an

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	<p>ash-bed on the bank of Spuyten Duyvil creek, is grooved about its shorter axis, an unusual feature. Figs. <i>b</i> and <i>c</i> represent "plummets" of stone, rarely found in tidewater New York, although the writer has seen examples from Croton Point on the Hudson, and one from Staten Island. Fig. <i>c</i> was picked up by the writer on the surface of a shell-strewn sandy knoll in a field not far from the Isham property, and adjoining Isham Park. It is a crude specimen compared with the one shown in fig. <i>b</i>, found by Mr William Isham not far away, and presented to the Museum by Mrs Taylor. "Plummets" are abundant in New England, and are known in the Finger Lake region of central New York, at least; but, as stated before, their presence here is rare. The writer knows of no others from Manhattan Island.</p> <p><i>Rude Stone Objects.</i>—Implements of stone, slightly altered by human labor, and sometimes shaped only by the attrition incidental to their use, are very com-</p>
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a



b



c

STONE CELTS
(About five-eighths actual size)

mon throughout tidewater New York, Manhattan Island sites being no exception. Plate xviii represents some of the most ordinary forms, of which dozens have been gathered by the writer at the Inwood site, and many more may yet be picked up. Plate xviii, *d*, represents a somewhat flat, oval pebble, with an elongate double pit on each of the two opposing flat surfaces. This feature is unusual, the pits, presumably for grasping with the thumb and forefinger, being generally single, and rounder than in this particular example. The form is by no means unknown, however, for the writer has seen other specimens from coastal New York.

Such pitted pebbles are generally called hammerstones, but this one, as is often the case, shows no abrasion around the edge. The writer once obtained a similar artifact, smooth, and saturated with grease, from Mrs Grayshawl, the aged Wahpeton Sioux grandmother of his Indian assistant, Mr One-

road, who explained that it was used in rubbing hides during the tanning process. The explanation is tenable for local specimens such as this.

Fig. *a* of pl. xviii represents a worn, round, granite pebble, showing considerable signs of use about the edge, and slightly cupped on both sides, giving it a resemblance to the biconcave discoidal stones of the South. It appears to have been a true hammerstone, however, but with a secondary usage for grinding, perhaps in preparing cornmeal, for one surface is worn nearly flat. It was found only a few feet away from a large stone mortar at the foot of the bluff close to the western edge of the brook-bed shellheap at Inwood.

Plate xviii, *b*, *c*, represent pebbles, notched on two opposite sides for use as net-sinkers. Such simple implements are very plentiful throughout New York, New Jersey, and Pennsylvania. The examples figured are from the brook-bed shellheap.



a



b



c



d

GROOVED STONE "PLUMMETS" AND SINKERS
(About five-sevenths actual size)

Polished Stone Ornaments.—Manhattan Island has yielded a number of gorgets and at least one butterfly-shape banner-stone, and the writer and Mr Onecroad were fortunate enough to discover several examples of gorgets and one doubtful fragment of a banner-stone in the brook-bed heap at Inwood.

Plate xiv, *b*, shows the major portion of a thin, flat, rectangular gorget of banded slate, with two perforations, and fig. *a* exhibits a more elongate form with four holes, made of a blue-gray slaty material without the bands. The number of perforations is unusual. All the drilling was done with a stone reamer, and, as is usual, is countersunk, but with no great accuracy, since the holes do not meet exactly, and in one case, the first hole from the fracture, a false start was made, the pit showing plainly at the edge of the hole. The specimen, as it now is, measures $4\frac{3}{4}$ in. in length. A small piece of another thin, flat gorget, probably similar to *b*.

was also found. Gorgets such as these, while nowhere common, are generally distributed throughout the Algonkian sites of New York, New Jersey, Pennsylvania, and New England.

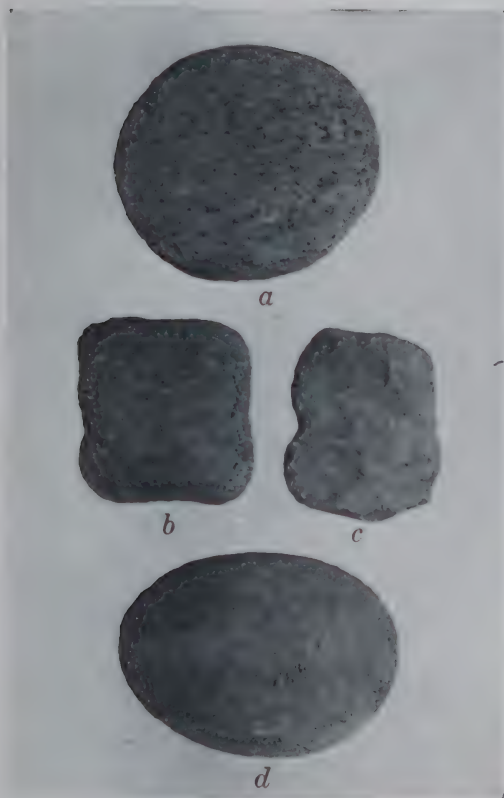
Fig. 1 shows a remarkable little trinket of mottled greenish stone, which seems to be a charm or a bangle, $1\frac{1}{2}$ in. high by $1\frac{3}{8}$ in. broad, on which is carved a human face



FIG. 1.—Human effigy ornament of stone from shellheap on Spuyten Duyvil creek, Inwood. (Actual size.)

in low relief. No doubt this rare article belongs to the same class of "medicine" or sacred objects as the stone heads found in the former territory of the Delaware Indians in New York, New

Jersey, and Pennsylvania. Volk^s illus-



HAMMERSTONES AND NET-SINKERS

a, d, Hammerstones; *b, c*, Net-sinkers. (About seven-twelfth's actual size)

trates a similar "charm" from New Jersey, carved of steatite, and in regard to it says, "The amulet is the first one of the kind or the first object representing the human face that I have ever found in the vicinity."

Like the New York specimen, this little carving is perforated at the base so that if suspended the face would hang upside down. The New York example has two perforations, and is slightly concave on the reverse side, the lower edge ending in a ridge, giving it the appearance of having been broken from some larger object, the nature of which cannot be determined. It was found on the bank of Spuyten Duyvil creek (see pl. 1) by Mr Oneroad.

Fig 2 represents a portion of a ring carved from red shale and perforated through the edges like a runtee; it was found by the writer on the surface of the shellheap close to the spot where the carved stone face was taken out. This object resembles certain others

found at the site of the Cayuga Indian

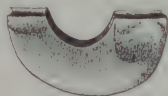


FIG. 2.—Ornament of red shale from south bank of Spuyten Duyvil creek, Inwood. (Actual size.)

Jesuit mission at Scipioville, New York, but has no duplicate in the Algonkian region of the coast. The lateral perforation, at least, is too fine to

have been made with anything but a metal drill, hence the specimen is doubtless of the historic period.

Fig. 3 shows what seems probably to be the remnant of a slate bird or bar

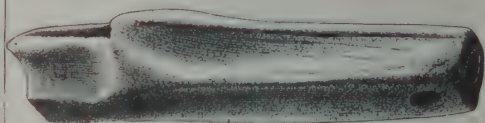


FIG. 3.—Broken stone amulet from shellheap south of Spuyten Duyvil creek, Inwood. (Length, $3\frac{1}{8}$ in.)

amulet, judging by the thickening at one end. This specimen, which was found in the Inwood shellheap, on the creek

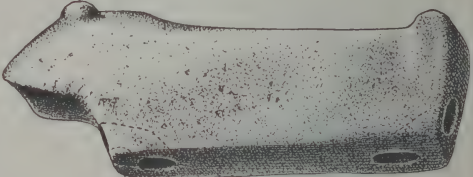


PIPES FROM THE INWOOD SHELLHEAD

a, Broken pottery pipe; *b*, Tubular stone pipe. (Three-fourths actual size)

bank, after having been broken by its aboriginal owner, was used perhaps as a whetstone, as its sides are deeply scored and scratched. It may, however, have served another purpose. The writer has often seen the Menomini, Ojibwa, Winnebago, and other woodland Indians, scrape some sacred charm and prepare the resultant powder with water for use as a medicine to heal the sick. If the bird or bar amulets were regarded as sacred, as they probably were, it is likely that the Manhattan may have seen fit to use them in doctoring. The remaining end of the object has the characteristic boring from two sides, at right angles to each other, found in many amulets of this nature.

Fig. 4 represents the only bird-shape or animal-shape amulet known to the writer from the vicinity of New York bay. It was presented by the Rev. William R. Blackie, who found it on the surface of a field of the Adolph

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	<p data-bbox="308 282 926 363">Lewisohn estate at Ardsley, Westchester county, and therefore is probably</p>  <p data-bbox="308 656 926 704">FIG. 4.—Amulet of animal form made of steatite, from Ardsley, Westchester county, N. Y. (Length, 2½ in.)</p> <p data-bbox="308 721 926 834">of Weckwaesgeek and not of Manhattan Indian make; however, the two tribes were closely related.</p> <p data-bbox="308 834 926 1159"><i>Pigments.</i>—Fragments of graphite and limonite are often found deeply scored by some object, presumably a stone scraper, in reducing their sides to powder for use, respectively, as black and red pigment. Examples are encountered in most Manhattan Island shell-deposits.</p> <p data-bbox="308 1159 926 1273"><i>Pipes.</i>—Tobacco pipes of polished stone and pottery were used by the Manhattan, and a number, mostly frag-</p>
II	INDIAN NOTES

mentary, were recovered from the brook-bed shellheap.

Plate xix, *b*, represents a straight tubular pipe of brown steatite, with the bowl on the same plane as the stem; it was found not far from the surface of the shellheap. This specimen is $3\frac{1}{8}$ in. in length, well polished, but without ornamentation. The stem seems to have been bored with a stone drill of somewhat irregular outline, which has left a series of spiral scratches on the interior. Probably the boring of the bowl was done in the same manner, but as the size of the original hole was much increased by gouging out the soft stone with a sharp implement, this cannot now be ascertained. The gouging tool has left a series of longitudinal scratches within the bowl. There is nothing about the pipe to suggest the use of other than native stone tools in its manufacture.

Another stone pipe is on record from Manhattan Island; it is a small rect-

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	<p>angular one of steatite, with a human face roughly scratched on the front of the bowl. It was found in the vicinity of Inwood by Mr W. L. Calver, and is now in the American Museum of Natural History.⁹</p> <p>Plate xix, <i>a</i>, shows the bowl and a portion of the stem of a rough terra-cotta pipe, discovered only a few feet away from that represented in fig. <i>b</i>; it is made of a light-brown, untempered clay of fair quality, and seems to represent an attempt to copy one of the well-known Iroquois forms. About the bowl are three raised bands; the angle of the stem where it joined the bowl is swollen and clumsy, and the thick sides of the bowl rim do no credit to the art of the Manhattan potters, who could, and usually did, produce far more graceful, delicate, and attractive ware. The stem is lacking, but judging by other specimens from the coastal region, it was short and stubby.</p> <p>Fig. 5 represents a fragment of a pipe</p>
II	INDIAN NOTES

bowl of clay, tempered with minute particles of ground mica-schist. The orna-

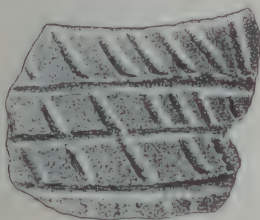


FIG. 5.—Pipe fragment from the brook-bed shellheap, Inwood. (Enlarged.)

mentation is a stamped or incised checker-pattern. It is from the brook-bed heap, at the end nearest the rock-shelters.

Fig. 6 illustrates a piece of the stem of a coarse, heavy, pottery pipe from Prescott avenue, where it was found by Mr Reginald Pelham Bolton, who presented it to the Museum. It is of interest from the fact that it has been greatly worn about the mouthpiece by the teeth of the owner, a most unusual feature, for nearly all New York Algon-

kian and Iroquois pipes alike show no signs of having been clenched between

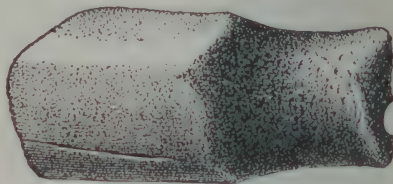


FIG. 6.—Part of earthenware pipestem showing wear from the teeth; from Prescott Avenue, Inwood. (Actual size.)

the teeth; indeed the writer has observed that most present-day Indians place the mouth-piece of their native pipes against the outside of the lips, instead of taking it into their mouths.

Bone Objects.—Bone and antler were rather extensively utilized by the Manhattan as material for the manufacture of various implements, but these are of the usual inferior workmanship and finish which characterize all New York Algonkian bonework as contrasted with that of the Iroquois.



BONE AWLS

a, b, h, i, j, l-n. Sliver awls; *d, p.* Awls with notched bases; *e.* Punch or dull awl; *k.* Polished awl of superior workmanship. (Length of $3 \frac{1}{16}$ in.)

In point of numbers, awls made of slightly sharpened bone slivers, principally from deer or other mammals, easily lead. Plate xx, *a, b, h-j, l-n*, show a series of typical examples from the brook-bed heap at Inwood and its immediate environs. Fig. *k* illustrates an example showing much better finish, from the same place; indeed in its excellence it approaches the Iroquois forms.

Plate xx, *c-g*, show a less common class, having the butts rudely notched or grooved. This variety, while apparently common enough, has escaped observation until recently, having been first described by the writer¹⁰ from specimens unearthed in the great shell-heap at Throgs Neck in the Borough of the Bronx, New York City.

Fig. 7 shows a bone of a small mammal, perforated at the proximal end, where a portion of the joint remains for use as a pendant. The specimen is decorated with notches or tallies cut on

both sides and edges, which once

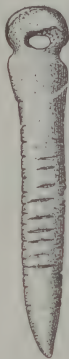


FIG. 7.—Bone pendant from the brook-bed shell-heap, Inwood. (Actual size.)

were filled, as indicated by traces when the specimen was found, with some glistening whitish substance. The notches number forty-nine, arranged on the edges in two groups of sixteen each, and on the sides by nine and eight. It measures $1\frac{3}{4}$ in. in length. No similar specimen has been recorded hereabouts. It was found in the ash-bed near the

foot of the bluff in the bed of the brook.

The curious specimen illustrated in fig. 8 is another anomalous bone article; it has a flat, thin base, perforated near one end, and at the other extremity it narrows to a point. Four parallel rows of dots, filled with black pigment when found, cross each other

diagonally to opposing corners, making an X-shape figure, which is duplicated

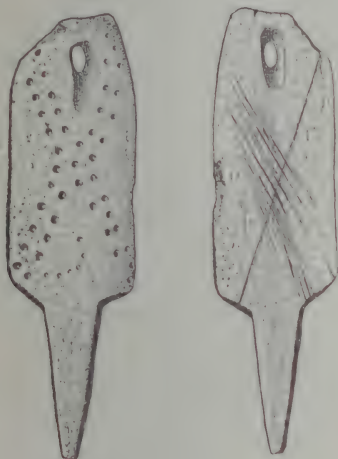
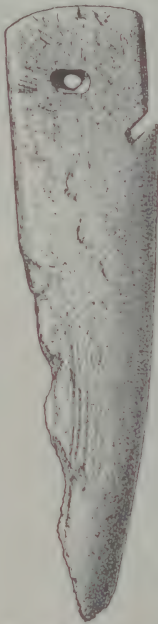


FIG. 8.—Bone pendant (obverse and reverse) from the
brook-bed shellheap, Inwood. (Actual size.)

in roughly scratched lines on the other side. The object is probably an ornament, and may have been intended orig-

inally to represent some animal. Like



the pendant described above, it came from the ash-bed at the foot of the bluff in the brook-bed shellheap. The specimen measures $2\frac{3}{4}$ in. in length, of which $1\frac{5}{16}$ in. composes the basal expansion.

Fig. 9 presents a bone harpoon of the unilateral variety, the only one on record from coastal New York. The barb is weak; in fact, it is little more than a notch or slot. The butt is perforated for further security in attachment to a shaft. The length is $3\frac{3}{8}$ in. Inasmuch as bone

FIG. 9. Harpoon point of bone from shellheap on Spuyten Duyvil creek, Inwood. (Actual size.)

BONE OBJECTS	191
<p>harpoons were so rare among the local Algonkian tribes and abundant in the Iroquois country, it is probable that this specimen, while differing slightly from the usual Iroquois types, is another example of the influence of that powerful people.</p> <p>Other objects of bone, such as perforated awls or needles, are in the collection of the American Museum of Natural History. A portion of the perforated end of an implement of this nature, found in the ancient shellheap at Dyckman street, is illustrated and described herein (pl. iv, <i>d</i>).</p> <p>Fig. 10 represents a canine tooth of a bear, slightly grooved at the base of the root for suspension. It came from the bank of Spuyten Duyvil creek, where the brook-bed heap reaches the water. Numerous unworked bears' teeth and some canine teeth of the elk have been unearthed at the same place, but none shows any indication of use as a charm or an ornament. Worked teeth are not</p>	
AND MONOGRAPHS	6

common in the coastal Algonkian region, though several were found in the great shellheap at Throgs Neck in the Bronx.



FIG. 10.—Bear-tooth pendant from shellheap on Spuyten Duyvil creek, Inwood. (Actual size.)

Turtleshell Cups.—

Cups or dishes made from the carapace of the common box-tortoise occur in abundance in the shellheaps and pits at and near Inwood, but all are in an exceedingly fragmentary condition. No rattles or perforated turtleshells have been reported.

Antler Objects.—

Antler was relatively little used by the Manhattan; at least, few objects of this material are found. Pl. xxi shows a small series of typical articles of antler. Fig. a rep-



ANTLER OBJECTS

a, Wedge; *b*, Distal end of a prong cut off with a stone knife; *c*, Cylinder; *d*, Prong with distal end hollowed; *e*, Prong, point sharpened and base hollowed. *e* is 3½ in. long)

resents an antler prong worked into a celt-like wedge, while *b* is an antler cut with a stone knife by the usual grooving and breaking process. Fig. *c* is an antler cylinder used probably as a chipping tool for flint-working. Fig. *d* is an antler prong with the distal end hollowed perhaps for use as a handle, and *e* shows another tine with the point sharpened and the base dug out.

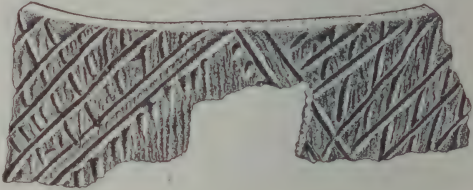
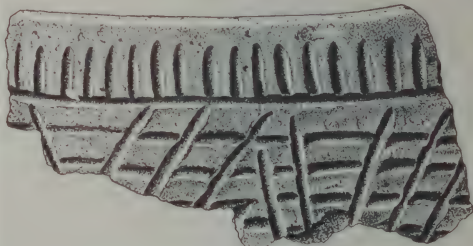
Pottery Vessels.—All three types of local pottery—Algonkian, sub-Iroquois, and Iroquois—are found on Manhattan Island, and, at Inwood, where the contents of the brook-bed heap have been commingled by the water of the stream, they occur together. Probably a number of sites existed in former years where Algonkian pottery alone was found, but of these only the ancient shellheap at the foot of Dyckman street remains, and, as has been noted elsewhere in this paper, a few sub-Iroquois sherds have been found on the surface even there.

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	<p><i>Algonkian Ware.</i>—The archaic Algonkian type of earthenware jar with pointed bottom proved abundant in the brook-bed shellheap and elsewhere on northern Manhattan Island during the investigations by the Museum, but no entire or even restorable vessel was found, nor is there a single example known to be in existence from all the ancient territory of the Manhattan Indians.</p> <p>Plate xxii represents a jar of this type restored from fragments found by Mr M. R. Harrington in a shellpit at Port Washington, Long Island, in 1900, for the American Museum of Natural History, whence it was obtained by exchange. The jar is 13½ in. high by 9¾ in. in diameter at the mouth. The rim does not flare, and it is somewhat narrower than the shoulders, which bulge outward slightly, the jar being widest at the center, below which it tapers to a rather sharp point. The ware is firm and well-fired; the</p>
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ARCHAIC TYPE OF ALGONKIAN JAR FROM PORT
WASHINGTON, LONG ISLAND
(Height 13½ in.)

P O T T E R Y	195
<p>color is brown mottled with black, and the vessel is of the same color inside and out. The clay is tempered with finely pulverized stone or with sand, and the receptacle shows drilling with a stone reamer in several places, evidently to lace together an old crack. The outside is slightly fabric-marked, and not all traces of the scraping tool with which the vessel was dressed and smoothed are obliterated. Inside, however, the surface is rather better finished. The decoration consists of simple rows of short, oblique, incised lines in horizontal groups.</p> <p>Judging by the other material found at the Port Washington site, it may be dated as late prehistoric: say about 1600, when the first Iroquois influence was felt locally, and sub-Iroquois pottery began to be in vogue, while the ancient Algonkian ware was improved in texture, even though the forms were still to survive for perhaps a century longer. The sites on northern Manhattan Island vary in age, being earlier,</p>	
A N D M O N O G R A P H S	6

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	<p>contemporary with, and later than the Port Washington village.</p> <p>Figs. 11 and 12 represent fragments of decorated rims of vessels of this type,</p>  <p>FIG. 11.—Algonkian potsherd from the brook-bed shellheap Inwood. (About $\frac{1}{2}$)</p>  <p>FIG. 12.—Algonkian potsherd from the brook-bed shellheap, Inwood. (Length, 4 in.)</p> <p>which, like all the rest, came from the Inwood heap or from nearby localities</p>
II	INDIAN NOTES

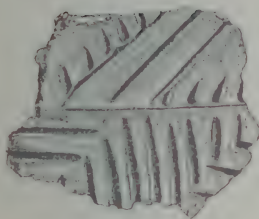
*a**b*

FIG. 13.—Algonkian potsherds with incised chevron ornamentation, from the brook-bed shellheap, Inwood. (Actual size.)

on northern Manhattan Island. Fig. 12 shows a diagonal net design occurring in chevron groups; it is incised in



FIG. 14.—Rim sherd from an Algonkian vessel, from the brook-bed shellheap, Inwood. (About $\frac{2}{3}$)

the ware, which is tempered with burnt and pounded shell.

Fig. 13, *a*, from a vessel of the same style and ware, shows a variant of the preceding design; and fig. 13, *b*, presents a sherd of the same vessel, but shows a different portion of the ornament.

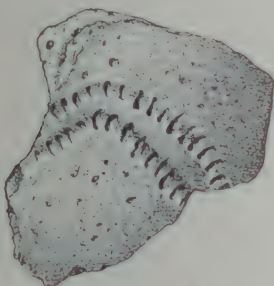


FIG. 15.—Potsherd with incised curvilinear ornamentation, from the brook-bed shellheap, Inwood. (Actual size.)

Fig. 14 illustrates a better, sand-tempered ware, and seems to be referable to the same period as that of the Port Washington vessel shown in pl.

xxii. The designs (chevron groups impressed with the familiar cord-wrapped stick) are more elaborate than the ornamentation of the preceding specimen. As in many other cases, the surface of the vessel retains some of the soot from cooking which encrusted it when found. It is nearly black in tone.

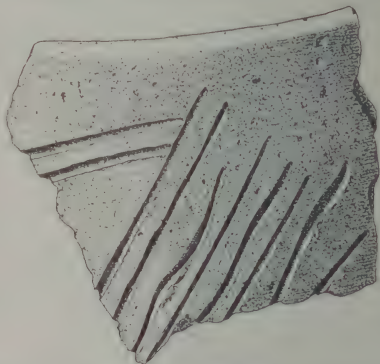


FIG. 16.—Potsherd from an Algonkian vessel, from the brook-bed shellheap, Inwood. ($\frac{3}{4}$)

Fig. 15 represents a small fragment of a jar, perhaps of this type, which has the very unusual feature of decoration in curvilinear figures.

Figs. 16 and 17 show fragments of jars that were probably ornamented with bold freehand chevron or concentric triangle designs, similar to those found on Staten Island and thence

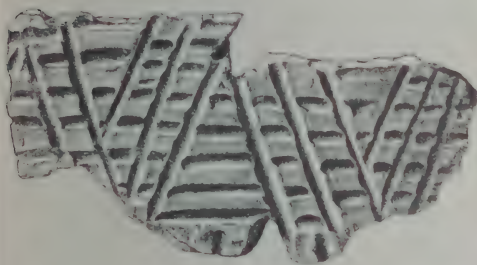


FIG. 17.—Potsherd from an Algonkian vessel from the brook-bed shellheap, Inwood. (About three-fifths)

southwestward to Trenton, New Jersey, where, at the great headquarters of the Unami division of the Delaware or Lenape Indians, they reached their highest development. Designs of this type are rare indeed on the mainland west of the Hudson.

Figs. 18 and 19 represent sherds of two reddish pottery jars, the former decorated with parallel lines made with a toothed roulette, and the latter with horizontal lines possibly produced with

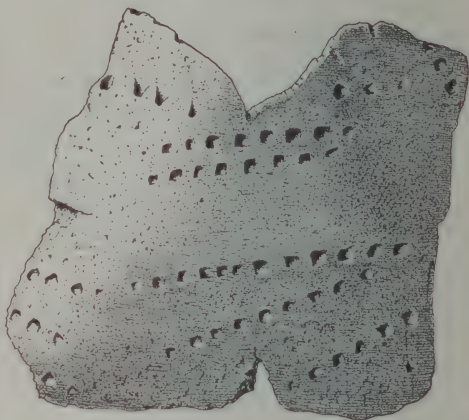


FIG. 18.—Potsherd from the brook-bed shellheap at Inwood. (About $\frac{2}{3}$)

a cord-wrapped stick. The same instrument has been used to indent the rim in a series of scallops.

Fragments of many other jars of this type, either perfectly plain or fabric-marked, with occasional flaring rims, were numerous, but scarcely require more than passing mention. Under four

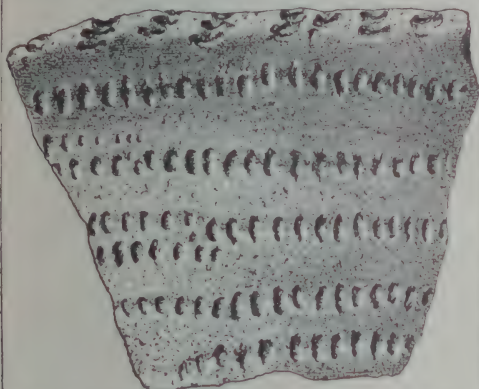


FIG. 19.—Algonkian potsherd from site at Broadway and Isham street. (Slightly reduced.)

feet of shells beneath the tulip tree at Inwood some exceedingly coarse sherds, half an inch thick, were unearthed; these were tempered with rather large pieces of burnt and pounded shell. Elsewhere,

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	<p>not far away, a gravel-tempered sherd of red was taken out, which is three-fourths of an inch in thickness, and which formed the larger portion of the roughly circular flat base of a jar of unknown shape. As these sherds were not among the shells of the water-washed brook-bed deposit, they may be assumed to belong to a fairly remote period. Several pointed bases were found, and one piece of a very crude rim encircled by a single ornamental band so deeply impressed as to form an embossed line inside.</p> <p>The pottery obtained in the brook-bed heap was all in poor condition as compared with that formerly found by Chenoweth in the nearby rockshelters and by the Museum's party in the neighboring shellpits, which always yield better earthenware than the shellheaps.</p> <p><i>Sub-Iroquois Ware.</i>—Of sub-Iroquois pottery a few characteristic sherds were obtained, of which pl. xxiii, <i>b, d, e, g-j</i>, are decorated with the impression of the</p>
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POTSHERDS

a, Algonkian; *b*, *d*, *e*, *g-j*, Sub-Iroquois; *c*, *f*, Iroquois

edge of a scallop-shell. Fig. *i* was found near the bank of North river, not far from the southern end of Fort Washington park. Fig. *b* illustrates part of the rim of a sub-Iroquois vessel showing the customary peak, with cord-wrapped stick decoration, while figs. *c* and *j* show simple patterns of incised lines, *j* having a narrow rim with oblique lines encircling it, and *c* having the lines more nearly horizontal, and in small groups.

Iroquois Ware.—Pl. xxiv represents an unusually fine and nearly complete vessel found in excavating a shellpit in 231st street by Messrs Bolton and Calver, who gave it to the Museum. The district where this was found was known to the early Dutch settlers as the Island of Papurinimen and was a favorite dwelling-place of the Indians. The vessel is 11½ in. high and 9 in. across the mouth. It is of well-smoothed, hard and finely tempered, mottled, light-brown ware, and is ornamented along its heavy overhanging collar with triangular pat-

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	<p>terns of lines. The decoration seems to have been stamped by means of a carved bone, antler, or wooden marker, so regular are the rows. Each peak on the rim is embellished with a group of broad, angular figures gouged or pressed in the clay; on both sides of the upper edge of the rim is a narrow band of short vertical lines stamped with a piece of the edge of a hard clam-shell. The inner surface of the jar still shows the marks of the scraping tool.</p> <p>Plate xxiii, c, f, represent two small, typical Iroquois sherds from the Inwood shellheap, and pl. xxv shows a large portion of an Iroquois jar found by Messrs Bolton and Calver in a shell-pit in Seaman avenue.</p> <p>In the collection of the American Museum of Natural History there are a number of restored Iroquois and sub-Iroquois jars, and the large Iroquois vessel discovered by Mr Calver at 214th street and Tenth avenue.</p> <p><i>Trade Articles.</i>—Prof. Marshall H.</p>
II	INDIAN NOTES



JAR OF IROQUOIS TYPE FROM TWO HUNDRED AND
THIRTY-FIRST STREET
(Height $11\frac{1}{2}$ in.)



PORTION OF A LARGE IROQUOIS JAR FROM
SEAMAN AVENUE, NEW YORK CITY
(Height of the sherd, $10\frac{3}{4}$ in.)

Saville reports having found an iron trade axe in a shellheap at Inwood, but that it was afterward lost. A globular, blue-glass bead was found by Mr W. L. Calver at the foot of Inwood hill, at the end of 207th street, and is now in the collection of the Museum of the American Indian, Heye Foundation.

A fragment of a brass trade kettle found by the writer in the Inwood shellheap may have been partly shaped for making a flat needle. It is imperforate, but bears on one surface a number of scratches, perhaps for ornamentation.

An antler knife-handle minus the metal blade, various bullets and gun-flints, with fragments of trade pipes, came from the same spot. Mr Chenoweth, in opening the rockshelters, procured a number of white-clay pipes marked "R. Tippet." Few if any other trade articles have come to light.

Shell Objects.—Some worked columellæ of the conch (pl. xxvi), prepared for wampum-making, and a piece of cut

clam-shell, are all the objects of their class that were found. They came from the brook-bed heap at Inwood.

TYPES OF SPECIMENS FROM MANHATTAN ISLAND

CHIPPED STONE

triangular points	baseless drills
notched points	winged base drill
stemmed points	chip scrapers
lozenge-shape points	broken points, rechip-
leaf-shape points	ped for scrapers

ROUGH STONE

notched sinkers	bannerstone
grooved sinkers or clubs	gouge
mortars	mullers or grinding stones
pestles	limonite paint stones
grooved axes (two styles)	graphite paint stones
celts	pitted hammerstones
	pitless hammerstones

POLISHED STONE

tubular pipe	face pendant
angular pipe	stone ring
two or more holed gorgets	steatite pendant
perforated banner-stone	bird-stone

EARTHENWARE

Iroquois pipe	Algonkian pottery
Algonkian pipe fragments	sub-Iroquois pottery
	Iroquois pottery



COLUMELLAE OF THE CONCH PREPARED FOR
WAMPUM MAKING

CULTURAL POSITION	209
<div data-bbox="322 257 412 287">SHELL</div> <div data-bbox="34 295 695 396"> <div data-bbox="34 295 347 396"> columellæ of the conch cut clam-shell </div> <div data-bbox="381 295 695 359"> shell pottery temper- ing </div> </div> <div data-bbox="231 399 508 430">BONE AND ANTLER</div> <div data-bbox="34 433 653 598"> <div data-bbox="34 433 347 598"> awls, plain awls with joints at- tached awls, notched base turtlesell cups </div> <div data-bbox="381 433 653 598"> perforated needles pendants arrowpoints cut antler cylinders </div> </div> <div data-bbox="256 601 482 631">TRADE ARTICLES</div> <div data-bbox="34 635 695 769"> <div data-bbox="34 635 347 769"> iron tomahawk brass needle bullets gun-flints </div> <div data-bbox="381 635 695 769"> fragments of bottle blue-glass bead knife-handle trade pipes </div> </div>	
<div data-bbox="44 803 700 878">CULTURAL POSITION OF THE MANHATTAN INDIANS</div> <div data-bbox="44 912 705 1340"> Judging by the quality and abundance of the remains found on Manhattan and Staten islands, the natives inhabiting these two areas were not only very closely affiliated, but formed a slightly aberrant offshoot from the typical Unami Delawares, as known from the material recovered from their sites, which center at Trenton, New Jersey, and not with the Indians of the Wappinger confeder- </div>	
AND MONOGRAPHS	6

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	<p>acy which held the east bank of the lower Hudson.</p> <p>The pottery of the Manhattan, Raritan, and Hackensack Indians is generally of good, well-tempered, and well-fired clay. The earlier vessels in particular are better made than those of the sites in the Bronx. Moreover, there is a boldness in the designs used in their ornamentation that is found only in the pottery from the Trenton sites, where the great freehand geometric (usually chevron) figures incised on the jars form a prominent feature of local archeology. Examination of the collections from the Siwanoy and other tribes east of the Manhattan, now gathered in this Museum and in the American Museum of Natural History or in private collections, shows a complete disappearance of this art.</p> <p>On the other hand, in common with the Siwanoy and other members of the Wappinger confederacy, the Manhattan and Staten Island Indians were under Iroquois influence, and, as a result, both</p>
II	INDIAN NOTES

sub-Iroquois and true Iroquois ware abounds. This ware is less common on southern Staten Island, and on the mainland in New Jersey away from New York bay, becoming less and less noticeable as one approaches the old Unami culture center at Trenton. The exception must be noted, however, that in the mountainous region of New Jersey north and west from New York bay, to the Minisink or Munsee country, Iroquois types are abundant on village-sites and in rockshelters. That this region was overrun by the Iroquois there can be no question. The remains found by Messrs Heye and Pepper¹ at Minisink show that the Munsee division, unlike their southern brothers, the Unami, had all but lost their ancient independent culture.

Tablets of stone bearing carvings of the human face, and human heads boldly sculptured in the round are characteristics of Manhattan and Staten islands that extend across New Jersey to the Unami headquarters, but do not appear

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	<p>east of the Hudson. An abundance of pipes in stone and clay also links the regions.</p> <p>Pipes, while found, are rare indeed to the eastward, until one reaches central Connecticut, where the western or southern New England culture, which also crossed to eastern Long Island, was at its height. This is true also of the relative abundance of polished slate gorgets and bannerstones, and in general of the better class of pecked and polished implements.</p> <p>It may be said, then, that the Hudson river is a boundary which separates, except for a few settlements on its eastern bank in the Bronx, the natives of Delaware culture from those of the New England area. Of course, as is common in such border regions, the differences are less marked than they are at their respective centers, yet, from an archeological standpoint, differences do exist. The material culture of southern New England, for example, includes the</p>
II	INDIAN NOTES

gouge, the adze, and the semilunar knife; west of the Hudson these objects are rare.

There seems to have been some linguistic variation. Rутtenber¹² says that four distinct languages spoken near Manhattan were recognized by the Dutch. These were "Manhattan, Minqua, Savanoos, and Wappanoos." Of these, Manhattan includes the Delawares; Minqua is Iroquoian; Savanoos is Shawnee, and Wappanoos covers the Wappinger and the nearest New England tribes, such as the Mohegan, Pequot, and Narragansett.

The Indians themselves recognized the difference between the tribal groups. We find that in 1645, under the heading of "Articles of Peace concluded in the Presence of the Mohawks between the Dutch and the River Indians," occurs the following statement:

"Today, the 30th of August, 1645, came to the Fort *Amsterdam* before the Director and Council in the presence of the whole community these Sachems or Chiefs of the savages in their own behalf and as attorneys

for the neighboring Chiefs, to wit *Oratamy*, chief of *Ichkinkehacky*, *Sesekemu* and *Willem*, chiefs of *Tappaens* and *Rechgawawanck*, *Pacham*, *Pennekeck* having been here yesterday and given them power to act for him, who also answer for the men of *Onamy* and their neighbors, *Magauzetinne-min* for the tribe of *Marechhawieck*, *Nayeck* and their neighbors, also personally *Aepjen*, speaking for the *Wappinck*, *Wiquaeskecks*, *Sintsings*, and *Kichtawanghs*."¹³

Here the *Rechgawawanck* or *Manhattan*, the *Tappan*, and *Hackensack*¹⁴ chieftains are appointed to speak for the *Unami* *Delawares*, while the *Canarsie* of *Brooklyn*, represented by the chief of their villages at *Marechhawieck* and *Nayeck*, form a second group, and the *Wappinger* and their relatives from the east bank of the lower *Hudson* are a third.

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<p><i>History</i> [revised edition of Leaflet 29], New York, 1915.</p> <p>Sites at Throgs Neck and Clasons Point, New York City. <i>Contributions from the Museum of the American Indian, Heye Foundation</i>, vol. v, no. 4, 1919.</p> <p>VOLK, ERNEST. Archaeology of the Delaware Valley. <i>Papers of the Peabody Museum of American Archaeology and Ethnology</i>, vol. v, Cambridge, 1911.</p> <p style="text-align: center;">NOTES</p> <ol style="list-style-type: none"> 1. SKINNER. Exploration of Aboriginal Sites at Throgs Neck and Clasons Point, New York City. <i>Contributions from the Museum of the American Indian, Heye Foundation</i>, New York, 1919. 2. MOOREHEAD. Stone Ornaments of the American Indian, p. 50, fig. 24, Andover, Mass., 1917. 3. SKINNER, op. cit., p. 71. 4. SKINNER. Archaeology of the New York Coastal Algonkin, <i>Anthr. Papers Amer. Mus. Nat. Hist.</i>, vol. III, p. 213, N. Y., 1909. 5. SKINNER. Exploration of Aboriginal Sites, op. cit., p. 73. 6. Chenoweth errs in ascribing this last feature to any vessel of the sub-Iroquois type as described here. None of the 	
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	<p>vessels which he restored, which are now in the American Museum of Natural History, possesses such a base. The pointed-bottom jar was a distinct type. It was this article which led to a denial by Beauchamp and Calver that pottery vessels with pointed bases exist in New York.</p> <ol style="list-style-type: none"> 7. This is not true; the cut is deep, but the shells are only a few inches in thickness. 8. VOLK, <i>Archæology of the Delaware Valley, Papers of the Peabody Museum</i>, vol. v, p. 186, Cambridge, 1911. 9. See <i>Anthn. Papers Amer. Mus. Nat. Hist.</i>, vol. III, pl. 17, fig. 5. 10. SKINNER, <i>Exploration of Aboriginal Sites</i>, op. cit., p. 59. 11. HEYE and PEPPER, <i>Exploration of a Munsee Cemetery near Montague, New Jersey, Contr. Mus. Amer. Ind., Heye Found.</i>, vol. II, no. 1, 1915. 12. RUTTENBER, <i>History of the Indian Tribes of Hudson's River</i>, p. 81, Albany, 1872. 13. DOCUMENTARY HISTORY OF NEW YORK, vol. XIII, p. 18, Albany, 1881. 14. The Tappan and Hackensack tribes have always been recorded as Unami Delaware dependents. See Ruttenber, op. cit., pp. 90, 91.
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